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A3
6. (Once amended) A dried and ground product comprising at least one of octabromodiphenylethane and nonabromodiphenylethane and containing at least about 90 wt% decabromodiphenylethane, said product having an occluded free bromine content of from about 100 ppm to about 300 ppm and a yellowness index in the range of about 12.5 to about 17.5.

A4
Amend Claim 8 to read as follows:

8. (Once amended) A composition which comprises a flammable macromolecular material and a flame retardant amount of a mixture of brominated diphenylethanes, the mixture of brominated diphenylethanes having an average bromine number of at least about 9.0, an occluded free bromine content of about 100 ppm to about 300 ppm, and a yellowness index in the range of about 12.5 to about 17.5.

REMARKS

Applicants request reconsideration of this application in view of the foregoing amendments and the following remarks. Claims 1-30, as amended, are in the case. A marked-up version of the original version of the above-amended description paragraph and claims, showing the changes made by these amendments, is attached.

Claims 6 and 7 stand rejected under section 102(e) as allegedly anticipated by Mack et al. ('248). This rejection is respectfully traversed. This rejection appears to depend upon the erroneous assumption that the Mack et al. ('248) disclosure of a "hydrolysable bromine" content somehow anticipates the specified "occluded free bromine" content of the present claims. In fact, the Office Action recitation of the disclosure of Mack et al. ('248) admits as much. However, the term "hydrolysable bromine" refers to bromine bonded to the organic compound product which can be hydrolyzed, which is entirely different from occluded *free* bromine, which exists without any molecular bond to the organic product molecule. Hydrolysable bromine content (the content of bromine capable of undergoing a hydrolysis reaction) is not synonymous with occluded free bromine. Nothing in Mack et al. ('248) discloses or suggests an occluded free bromine content, much less one which anticipates the instantly specified occluded free bromine content. Accordingly, this rejection is based upon an erroneous reading of the cited reference, and the rejection should be reconsidered and withdrawn.

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Claims 1-30 stand rejected under section 103(a) as allegedly unpatentable over Mack et al. ('248). This rejection also is respectfully traversed for the same reason; namely, that Mack et al. ('248) does not teach, disclose or suggest occluded free bromine content, much less the specified content of such in the present claims, and is therefore an ineffective reference for this section 103(a) rejection. This rejection too should be reconsidered and withdrawn.

In regard to Claim 1-4, Applicants teach, on page 14, lines 1-4 of their specification, that the color of a wet cake also evidences its occluded free bromine content. Mack et al. report in Examples 1 and 5 that their decabromodiphenylethane wet cake product, which has been produced under the bromination conditions of Mack et al., has, after being dried, a YI of 73.4 and 45 respectively. This is powerful testimony to the high occluded free bromine content of the Mack et al. undried wet cake. Compared these colors against Applicants' dried wet cakes which have a YI of 12 to 18. Thus, Mack et al. is not suggestive or anticipatory of Applicants' claims 1-4. In the other of the Mack et al. Examples, the final product has a lower YI, but those products have all undergone oven aging or recrystallization which do not relate to the original YI of the wet cake, i.e., most of the occluded free bromine is removed by the oven aging or recrystallization.

Claims 5-30 stand rejected under section 103(a) as allegedly unpatentable over Mack et al. ('248) in view of Parks. This rejection is respectfully traversed. Mack et al. ('248) suffers from the same defect of disclosure as previously mentioned for the rejections based upon Mack et al. ('248) alone. In addition, Parks does not stand as an applicable prior art reference under 35 U.S.C. § 103(c), since Parks was owned by Albemarle Corporation at the time the present invention was made (and remains so), as evidenced by the assignment recorded on December 8, 1994 at USPTO reel no. 7233, frame no. 0172. Albemarle Corporation is also the assignee of the present application and its parent cases, as evidenced by the attached assignment document. Since Parks is not an available prior art reference, the rejection of Claims 5-30 relies upon a reference which cannot be used to form the basis of the rejection. Withdrawal of this rejection is therefore appropriate.

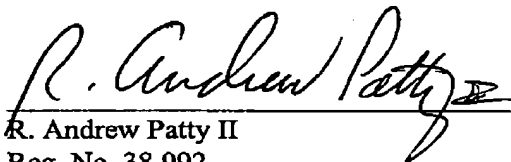
In addition to the foregoing arguments, it will be noted that Applicants have voluntarily amended paragraph 25 of the description to correct an obvious clerical error in the misplacement

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of the word "ratio" when it should have read -- range --. Furthermore, independent Claims 5 and 6 have been amended to specify that these claims are directed to dried and ground product, and that the product has a yellowness index in the range of about 12.5 to about 17.5. In addition, Claim 8 has been amended to specify that the mixture of brominated diphenylethanes is dried and ground and has a yellowness index in the range of about 12.5 to about 17.5. Support for these amendments may be found at least at Specification page 19, paragraph 73. Nothing in the cited references, singularly or in combination, teaches, discloses or suggests a product or composition having the features of any of these claims.

The required petition for a one-month extension of time to file this reply and the requisite authorization for payment of the necessary fee are attached. Please continue to address correspondence in this application to Mr. Pippenger of Albemarle Corporation at the address of record. Favorable action upon all of the claims in this case is solicited.

Respectfully submitted,



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CERTIFICATE OF TRANSMISSION

I hereby certify that this document, and any attachments referenced herein and attached hereto, are being transmitted on the date indicated below to the U. S. Patent and Trademark Office by facsimile number : 1-703-872-9306, in accordance with 37 C.F.R. § 1.6(d).

Feb. 25, 2002
Date



R. Andrew Patty II

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**VERSION OF AMENDED PARAGRAPH AND
CLAIMS SHOWING CHANGES MADE**

Description Amendment:

[0025] The molar ratio of bromine to diphenylethane used to form the desired mixture lies within the range of from about 5:1 to about 30:1, and preferably within the range of from about 7.5:1 to about 25:1. Most preferably, the molar ratio lies within the range of from about 9:1 to about 25:1. Most highly preferred is a ratio within the range [ratio] of about 10:1 to 15:1. Molar ratios in excess of 30:1 may be used; however, such excess ratios will result in more liquid bromine being present after the reaction and thus, higher attendant costs for the bromine recovery step.

Claim Amendments:

5. A dried and ground, [dry] solid brominated diphenylethane product mixture [ground to] having an average particle size of about 3 to about 5 microns, containing at least about 90 wt% decabromodiphenylethane, [and] having a content of about 700 to about 1000 ppm of occluded free bromine, and having a yellowness index in the range of about 12.5 to about 17.5.

6. A dried and ground product comprising at least one of octabromodiphenylethane and nonabromodiphenylethane and containing at least about 90 wt% decabromodiphenylethane, said product having an occluded free bromine content of from about 100 ppm to about 300 ppm and a yellowness index in the range of about 12.5 to about 17.5.

8. A composition which comprises a flammable macromolecular material and a flame retardant amount of a mixture of brominated diphenylethanes, the mixture of brominated diphenylethanes having an average bromine number of at least about 9.0, [and] an occluded free bromine content of about 100 ppm to about 300 ppm, and a yellowness index in the range of about 12.5 to about 17.5.

ASSIGNMENT

Serial No. _____ Filed: _____ Case No. BR-6842-A

We, JOHN C. PARKS, a citizen of the United States of America, residing in the Parish of East Baton Rouge, State of Louisiana, at 18444 Weatherwood Drive, Baton Rouge, Louisiana 70817; DAVID H. KNOEBEL, a citizen of the United States of America, residing in the Parish of Claiborne, State of Louisiana, at Rt. 1, Box 192-20, Homer, Louisiana 71040; LAWRENCE H. JENKINS, a citizen of the United States of America, residing in the County of Columbia, State of Arkansas, at 471 Columbia 108, Magnolia, Arkansas 71753; GEORGE H. RANSFORD, a citizen of the United States of America, residing in the County of Columbia, State of Arkansas, at 2500 Fox Run Lane, Magnolia, Arkansas 71753; GARY L. BOWMAN, JR., a citizen of the United States of America, residing in the County of Lafayette, State of Arkansas, at RR 1, Box 211, Stamps, Arkansas 71860; and SAADAT HUSSAIN, a citizen of the United States of America, residing in the Parish of East Baton Rouge, State of Louisiana, at 5121 Highland Ridge Drive, Baton Rouge, Louisiana 70817 have made at least one improvement or discovery described in patent application having the above designated case number, entitled

IMPROVED BROMINATION PROCESS

and for which improvement or discovery we have filed application for Letters Patent of the United States.

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, we hereby transfer, set over and assign to

ALBEMARLE CORPORATION

a corporation duly organized and existing under the laws of Virginia, and having a place of business at Baton Rouge, Louisiana, and its successors and assigns, the entire right, title and interest in, to and under said application for Letters Patent and all improvements and discoveries, whether joint or sole, disclosed therein, and the resultant patent or patents thereon and any renewals, extensions, substitutions, continuations, or divisions thereof, including all priority rights arising in other countries from said application and all foreign rights in and to said improvements and discoveries.

We further agree to execute such further papers, and perform such other proper acts as said Corporation may deem necessary to secure to said Corporation the rights herein conveyed; and we hereby authorize the insertion into this Assignment of the serial number and filing date of said application.

Inventor

JOHN C. PARKS

Inventor

SAADAT HUSSAIN

STATE OF LOUISIANA
PARISH OF EAST BATON ROUGE

On this 25 day of May, 1995, personally appeared before me JOHN C. PARKS AND SAADAT HUSSAIN to me known to be the persons named in and who executed the above instrument in my presence, who acknowledged that they executed the same of their own free will for the uses and purposes herein mentioned.

(Notarial Seal)

[Signature]
Notary Public

Inventor

DAVID H. KNOEBEL

Inventor

GEORGE H. RANSFORD

Inventor

LAWRENCE H. JENKINS

Inventor

GARY L. BOWMAN, JR.

STATE OF ARKANSAS
COUNTY OF Columbia

On this 26 day of May, 1995, personally appeared before me DAVID H. KNOEBEL, LAWRENCE H. JENKINS, GEORGE H. RANSFORD AND GARY L. BOWMAN, JR. to me known to be the persons named in and who executed the above instrument in my presence, who acknowledged that they executed the same of their own free will for the uses and purposes herein mentioned.

(Notarial Seal)

[Signature]
Notary Public
Wilma H. Lewis, Notary Public
Columbia County, Arkansas
My Commission Expires 11/1/2003